

There is the possibility that in this instance, as Wooton¹⁴ pointed out, the "plants were not distributed under the collection numbers." Until further information is at hand, Turkey Creek, Uvalde-Kinney county line, Texas, may be accepted as the type locality of *Datura Wrightii* Regel.

RECOMMENDATIONS

a) I recommend that *Datura meteloides* DC. be accepted as a *nomen emendandum* and continued in use with such corrections made in descriptions as are necessary to bring the concept into accord with the living plant.

b) It is desirable that record of such an emended status be made by citing the binomial as "*D. meteloides* DC. *emend.*"

c) I recommend that "*D. meteloides* DC." be considered by the Committee on Nomenclature of the International Botanical Congress; and if a *nomina conservanda* list for species, apart from that for genera, meets with support from the Congress, that the binomial be proposed for that list to be acted upon at the next regular meeting of the Congress.

d) In the event that *D. meteloides* DC. is relegated to the list of *nomina confusa* by the Congress, I recommend that *Datura Wrightii* Regel be taken up as the next available name for this species.

e) I recommend that *Charles Wright 526* (USNH 60043) be accepted as the lectotype, as designated herein, and that accordingly Turkey Creek, Uvalde-Kinney Co. line, Texas, be taken as the type locality for *D. Wrightii* Regel.

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IS ERIGERON CAROLINIANUS A VALID AMERICAN SPECIES?

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In his sumptuous *Hortus Elthamensis*, ii. 412, t. CCCVI, fig. 394 (1732), Dillenius described and illustrated his *Virga aurea carolinensis*, *Linariae monspessulanae foliis*; and upon this account alone Linnaeus, *Sp. Pl.* 863 (1753), based his *Erigeron carolinianum*, assumed by Linnaeus from the Dillenian phrase to have its habitat in Carolina. *Erigeron carolinianus* was one of several plants given binomials by Linnaeus, probably without first-hand knowledge of them, and assumed to be American.

Naturally American botanists began guessing what Dillenius might have had. Most of them, unfortunately, did not read what he said. Thus Pursh, *Fl. Am. Sept.* ii. 535 (1814), placed

¹⁴ Wooton, *Bull. Torrey Bot. Club* 33: 561-566. 1906; cf. also, Geiser, *Field & Lab.* 4: 23-32. 1935, for valuable additions to Wooton's paper.

the yellow-flowered Dillenian plant with flowers all ligulate, the stem "two cubits and more high, and at base as thick as a small finger", in the synonymy of the delicate filiform-stemmed and caespitose *Erigeron hyssopifolius* Michx. (0.5–3 dm. high, with 1 or few terminal heads with central 5-toothed corollas of all *Astereae*, the long ligules lilac-purple to white) which occurs on calcareous rock from Newfoundland to Mackenzie, south to Nova Scotia, New Brunswick, central Maine, northern Vermont, northern New York, Ontario and northern Michigan. By so disposing of *E. carolinianus*, Pursh gave the boreal *E. hyssopifolius* the impossible range: "In low grounds: Canada to Carolina . . . rays yellow." That was a hopelessly bad guess but, really, no worse than those made by later authors; but in order to understand the problem it is necessary to quote the pertinent points in the long Dillenian account (freely translated):

Stem erect, 2 cubits and more high, as thick as the little finger toward the root, terete, reddish below, striate, clothed from base to summit with crowded very narrow entire leaves, similar to those of *Linaria odorata* J. Bauhin, yet not glabrous but subhirsute; stems toward the summit emitting frequent leafy branches with leaves like the others but smaller, these branches with 1–few flowers (heads); involucre oblong, slender, scaly (6–7 mm. high, 3–4 mm. thick), its ligules ("semi-flosculi") small and yellow (fig. 1) the disk-florets (figs. 2 and 3) not stellately divided, as in other species, but entire at summit, with a ligule at one side; achenes with slender pappus . . . Odor of *Conyza Canadensis* (*E. canadensis*).

Then Dillenius added the significant note that in the greenhouse the plant flowered in late November, the flowers appearing to him to be not natural; in other words, the plant seemed to Dillenius to be a monstrosity¹ (possibly due to aphids or fungi).

Returning to early attempts to place the Dillenian plant, in 1826 Cassini (a famous generic splitter in the *Compositae*), setting up the new genus *Phalacrolooma* for *Erigeron annuus* and *strigosus*, said under his *P. obtusifolia* Cass. in Dict. Sci. Nat. xxxix. 405 (1826), *i. e.* *Erigeron strigosus*: "Nous avons fait cette description spécifique, et celle des caractères génériques, sur un échantillon sec, incomplet et en très-mauvais état, qui se trouve dans l'herbier de M. Desfontaines, où il est étiqueté avec doute *Erigeron carolinianum* ou *hyssopifolium*"—showing how easily

¹ In Hibernaculo Elthamensi floruit anno 1727. Novembris fine, cumque tam fero flores protulerit, dubium mihi visum, num flosculi essent naturales, & an non alia tepidiore tempestate, flosculorum aliorum instar aperirentur, si nempe maturius floreret.

segregate-genera could be proposed long before the so-called "Neo-American" era. Then in 1836, Cassini's American rival at generic splitting, Rafinesque, published the genus *Diplemium* Raf. Fl. Tellur. ii. 50, with four species: *Erigeron carolinianum* L.; *E. nervosum*, the *E. nervosus* Willd., which is *Chrysopsis nervosa* (Willd.) Fernald in RHODORA, xliv. 471 (1942); *Erigeron quercifolius* Lam. and *E. strigosus* Muhl.—the combinations under *Diplemium* not then made. Of these guesses Torrey & Gray, both wise and cautious, wrote: "*E. Carolinianum*, of Linnaeus, is wholly founded on the *Virga-aurea Caroliniana*, &c. Dill. Elth. t. 306, f. 394, a yellow-flowered plant, which no botanist has succeeded in identifying. It has nothing in common with the *Phalacrocoma obtusifolium* of Cassini (which is *Erigeron strigosus*), nor with the *Erigeron hyssopifolium*, Michx. . . . This confusion commenced with Pursh, who erroneously adduced the figure of Dillenius and the *E. Carolinianum* as synonyms of the *E. hyssopifolium* of Michaux."—Torr. & Gray, Fl. ii. 180 (1841).

It would have been well if Torrey & Gray's note had finally disposed of the freaky plant which Dillenius himself thought to be abnormal. Asa Gray, in his search of the old specimens preserved at Oxford, found, according to memoranda accumulated by Dr. Stuart K. Harris when he was studying the group, the sheet from which the Dillenian description and plate were made and marked it "*Est Solidago tenuifolia minus evoluta*". Consequently, feeling that the plant belonged there, he gave it in the synonymy of the all-inclusive *S. tenuifolia* Pursh, with the note: "*S. TENUIFOLIA*, Pursh. This proves to be the *Erigeron Carolinianum*, L., that is, *Virga-aurea Carol.*, &c. Dill. Elth. 412, t. 306, fig. 394."—Gray in Proc. Am. Acad. xvi. 198 (1880). This synonym was, consequently, given in the Synoptical Flora under *S. tenuifolia*; and with alacrity the Committee of the Torrey Botanical Club, without a word of clarification or any supporting citation, rushed it into print as *Solidago* "Caroliniana, (L.) (*S. tenuifolia*, Pursh)" in BSP. Prelim. Cat. 26 (1888). One has to have a good background of bibliographic data to interpret such loosely published stuff! In 1894 Greene, again with complete and most atypical faith in Gray's opinion of 1880, came out with *Euthamia caroliniana* (L.) Greene in Mem. Torr. Bot. Cl. 321 (1894), to displace *Solidago tenuifolia* Pursh and *Euthamia tenuifolia* (Pursh) Nutt.

Now it so happens that the *Solidago tenuifolia* sensu Gray, BSP. and their contemporaries and the *Euthamia tenuifolia* sensu Greene in 1894 consisted of two quite definite species: (1) true *S. tenuifolia* Pursh as to description "foliis . . . obsolete trinerviis"—the plant of New Jersey, extending north into Nova Scotia, New England, etc., and rapidly passing out southward; and (2) *S. minor* (Michx.) Fernald in RHODORA, x. 93 (1908) *S. lanceolata*, β . *minor* Michx. Fl. Bor.-Am. ii. 116 (1803) "in pascuis circa Charlestown [South Carolina]," *S. tenuifolia* Pursh, in part, not as to description, and *Euthamia minor* (Michx.) Greene, Pittonia, v. 78 (1902)—*S. minor*, superabundant in the Southeastern States, becoming rare as far north as southern New Jersey. As pointed out by me in 1908 it is "Distinguished from *S. tenuifolia* Pursh, which has flat leaves 2-6 mm. wide and the campanulate involucre 2-3 mm. broad, by its almost acicular leaves (the middle cauline 1-1.5 mm. wide) and its nearly cylindrical acute-based involucre only 1-1.5 mm. broad." With two quite distinct and geographically usually isolated species included in Pursh's original *S. tenuifolia* and in the concepts of Gray, Britton and others and of Greene in 1894, the substitution for it of *S. caroliniana* (L.) BSP. or *Euthamia caroliniana* (L.) Greene leaves much in need of clarification, for true *S. tenuifolia* probably does not reach even North Carolina.

Unhappily, however, the name *S. minor* (Michx.) Fernald, used in Gray's Manual, ed. 7 and by Mackenzie in Small's Manual, is antedated by *S. minor* Mill. (1768). Another name for the characteristic southeastern plant has to be found. Of that more later.

In 1902, furthermore, Greene entered the lists. A single southeastern species, *Solidago* or *Euthamia minor* was not enough. He took up *E. tenuifolia* (Pursh) Greene, Pittonia, v. 77 (1902) for the northern species, made the combination *E. minor* for the common southeastern species, described by him as having the stem "corymbosely parted at about the middle into very slender more or less fastigiate branches all copiously . . . floriferous: leaves . . . very narrowly linear, pungently acute, 1-nerved, . . . glabrous throughout, scarcely even the margin scaberulous." But Greene did not stop there; he proceeded to split the southeastern species into the artificial segregates

(photographs of the types secured and presented to the Gray Herbarium by Dr. Harris), *E. microcephala*, from the Carolinas and Georgia, and *E. microphylla* from southern Mississippi. Furthermore, he decided that one number, more loosely branching than most *E. minor* but with broadly corymbose summit, *Tracy*, no. 4748 from Biloxi, Mississippi, was "a most satisfactory herbarium representative of *E. Caroliniana*," Greene then repudiating his and others' misidentification of *Erigeron carolinianus* in characteristically dramatic terms: "In so far as it is connected with a low plant with a corymbose mode of branching that is common both at the North and the South, the above name is misapplied. A critical enquiry into the originals of *Erigeron Carolinianus*, Linn. reveals conclusively the fact that it is a plant exceedingly unlike the *Solidago tenuifolia* of Pursh, with which all authors for eighty years past have blindly agreed in confusing it. Doubtless all that Linnaeus knew about the plant in question he learned from the figure and description that had been published in 1732 by Dillenius. He describes it, evidently from the plate of Dillenius, as an *Erigeron* with paniced stem, solitary heads at the ends of the branchlets . . . It is so exactly a paniculate 'Erigeron' that he places it next to *E. Canadensis*."

When, however, Greene confidently identified the Tracy specimen with the really very different Dillenian plant he overlooked several important differences. In the first place the habit, for Dr. Harris's photograph shows that the *Tracy* specimen which Greene found "a most satisfactory herbarium representative of *E. Caroliniana*", has the fastigiately paniculate-corymbose inflorescence nearly as broad as high and, as Greene admits, "much more broadly [branching] than in the cultivated specimen which Dillenius figured from"—as if cultivation changed a broadly corymbiform inflorescence with many-headed branches several times longer than the subtending leaves into a slenderly virgate-racemiform one with branches shorter than the subtending leaves and the solitary terminal heads greatly enlarged! Another point was overlooked: the Dillenian plate shows the solitary involucres 6–7 mm. high and 3–4 mm. thick; an involucre of *S. minor* (including *Tracy*, no. 4748) more than 4 mm. high and 1.5 mm. thick would be very exceptional. And what of the flowers of the Dillenian plant, all ligulate, the disk-corollas "non stellatim

divisi, ut in aliis speciebus, sed integri in summitate, ab altero latere clausi, ab altero aperti, unde stylus erumpit in duo cornicula longiuscula divisus''? In *S. minor* (including Greene's supposed *Euthamia caroliniana*) the style is included or at most only short-exserted above the regularly 5-toothed limb of the disk-corolla.

Altogether Greene's guess is no better than the others. The sad situation is, that, never having previously looked into the matter, I have been accepting the statements of others (I never learn not to do so) and have distributed many specimens of *Solidago minor* under the inadmissible name *S. caroliniana*. Dr. Harris was evidently misled, as shown in his manuscript discussion of the matter, by accepting as the type of the Dillenian and Linnean species, not the plant described by Dillenius but another specimen in the Dillenian herbarium which is typical *S. minor*. From Dr. Harris's unpublished manuscript I am allowed to copy the following item which explains his interpretation and the labeling of much material as *S. caroliniana*: "In the summer of 1935 Mr. C. A. Weatherby examined the Dillenian material of *Erigeron carolinianum* and found that there were three sheets, two of which could have served as a basis for the plate. His notes show that . . . the heads, while immature, are turbinate and the involucrel bracts oblong, abruptly acute and shining but not strongly glutinous. The third sheet was collected by Catesby in South Carolina in 1723 and has the normal inflorescence of the *S. caroliniana* complex, is distinctly glutinous and has the heads 3-4 mm. high. These facts seem to bear out Greene's assertion that *S. caroliniana* is distinct from *S. tenuifolia*". Even though Dillenius had in his herbarium a perfectly normal plant of *S. minor*, collected by Catesby in 1723, that cannot be admitted as the type of *Erigeron carolinianus*. The latter was based exclusively on the description and plate of Dillenius, who did not describe, mention nor illustrate the Catesby specimen. His species rests wholly on the plant raised in the greenhouse, and described or shown to have an elongate-racemose inflorescence of solitary heads twice the size of those of the corymbose specimen of Catesby and with the disk-corollas ligulate and with long-exserted style-branches. We surely cannot take as the type of a well described and clearly illustrated species a specimen which was neither described nor illustrated.

As to the identity of the Dillenian plant and the resultant *Erigeron carolinianus* L., I do not know what it was unless it was something not originally from Carolina or, as Dillenius thought, an abnormal individual. If it were the latter the name cannot stand. It is automatically excluded by Art. 65 of the International Rules: "A name or epithet of a taxonomic group must be rejected when it is based on a monstrosity".

Since the familiar name, *Solidago minor* (Michx.) Fernald is a later homonym another name must be taken up in its place. The bibliography, for which I am chiefly indebted to Dr. Harris, follows:

SOLIDAGO MICROCEPHALA (Greene) Bush in Am. Midl. Nat. v. 176 (1918). *S. lanceolata*, β . *minor* Michx. Fl. Bor.-Am. ii. 116 (1803). *S. tenuifolia* Pursh, Fl. Am. Sept. ii. 540 (1814), in part. *S. caroliniana* BSP. Prelim. Cat. 26 (1888) in part; Harris in RHODORA, xlv. 413 (1943); not *Erigeron carolinianus* L., basonym. *Euthamia caroliniana* Greene in Mem. Torr. Bot. Cl. v. 321 (1894), in part, and Pittonia, v. 76 (1902) as to plant, not *Erigeron carolinianus* L., basonym. *Euthamia minor* (Michx.) Greene, l. c. 78 (1902). *Euthamia microcephala* Greene, l. c. 79 (1902). *Euthamia microphylla* Greene, l. c. (1902). *S. minor* (Michx.) Fernald in RHODORA, x. 93 (1908), not Mill. (1768). *S. microphylla* (Greene) Bush, l. c. 177 (1918). *S. Michauxii* House in N. Y. State Mus. Bull. no. 254: 695 (1924).

Another member of *Solidago*, \S *Euthamia* which, unfortunately, must be rechristened is the northernmost variety of *S. graminifolia*, the extreme with relatively broad and bluntish instead of attenuate, leaves which ranges across the continent from Newfoundland and Saguenay Co., Quebec, to Hudson Bay, thence to northern Alberta, south to the Gaspé Peninsula, Quebec, northern Michigan, northern Minnesota, the Black Hills of South Dakota, the Rocky Mts. to northern New Mexico and the valleys of southern British Columbia. Dr. Harris has recently called this most boreal variety *S. graminifolia*, var. *tricostata* (Lunell) Harris in RHODORA, xlv. 413 (1943), based on *Euthamia camporum*, var. *tricostata* Lunell (1911). In doing so Dr. Harris evidently overlooked, as I did in 1913, a very much older varietal name given by Michaux in 1803 to characteristic specimens from Lake St. John, Quebec. This Michaux variety necessitates the combination

S. GRAMINIFOLIA (L.) Salisb., var. **major** (Michx.), comb. nov. *S. lanceolata* L., α . *major* Michx. Fl. Bor.-Am. ii. 116 (1803). *Euthamia camporum* Greene, var. *tricostata* Lunell in Am. Midl. Nat. ii. 59 (1911). *S. camporum* (Greene) Bush, var. *tricostata* (Lunell) Fedde in Just, Bot. Jabresb. xli. Abt. 2: 144 (1913). *S. graminifolia*, var. *septentrionalis* Fernald in RHODORA, xvii. 12 (1915). *Euthamia bracteata* Bush in Am. Mid. Nat. v. 172 (1918). *S. bracteata* Bush, l. c. 173 (1918). *S. graminifolia*, var. *tricostata* (Lunell) Harris in RHODORA, xlv. 413 (1943).

Michaux defined two varieties under *Solidago lanceolata*:

Var. α . *major*: foliis rarioribus, latiuscule linearibus: quae CHRYSOCOMA *graminifolia*. Linn.

— β . *minor*: foliis crebrioribus, anguste linearibus; axillis foliosis: subglutinosa.

HAB. α . in Canada.

— β . in pascuis circa Charlestown.

The latter, type of *Solidago minor* (Michx.) Fernald, not Mill., the southeastern species, *S. microcephala* (Greene) Bush, has been sufficiently discussed (see p. 326). The only Canadian material under *S. lanceolata* in the Michaux Herbarium at Paris is a well preserved sheet from Lake St. John, selected by M. Metman as the type of var. α *major*. The sheet has 3 specimens, so like material of var. *tricostata* from James Bay (*Potter*, no. 46), from Red River, Minnesota (*Ballard*, no. 3108) from Leeds, North Dakota (Lunell), isotype of var. *tricostata*, and from the Black Hills (*Rydberg*, no. 770) that I detect no difference. In fact, it would have been most remarkable if Michaux, ascending the Saguenay to Lake St. John, then crossing over to Rupert River and descending that, had not found the characteristic plant of that area. The varietal name used by him is highly inappropriate for one of the smaller variations of *S. graminifolia*. He was contrasting his broad-leaved northern plant with his narrow-leaved southern one.